USSR/Chemistry - Pharmaceuticals 11 Aug 53

"Infra-Red Spectra and the Structure of Semicarbazones," S. G. Bogomolov, I. Ya. Postovskiy and Yu. N. Sheynker, Ural Polytech Inst im S. M. Kirov, Sverdlovsk, and All-Union Sci-Res Chemicopharm Inst im Ordzhonikidze, Moscow

DAN SSSR, Vol 91, No 5, pp 1111-1114

Studied the characteristics of the chemical structure of semicarbazones with the aid of infrared absorption spectra. In all of the semicarbazones studied, an absorption band was noticed in the region 1588-1626 cm^{-1}, which apparently indicates a deformational oscillation of the $-NH_2$ group. Compds of this class are effective antituberculous drugs. Presented by Acad V. M. Rodionov 17 June 53.

266T7

CHEMISTRY, GEN.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Electronic Phenomena and Spectra

Infrared and ultraviolet spectra of absorption of some acetylated derivatives of 2-aminothiazole. S. G. Bezzubikh, Yu. N. Sheinker, and L. Ya. Postovskii (All-Union Chem. Pharm. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 93, 277–80(1953).—Absorption spectra of acetylated: 2-aminothiazole (I), 2-amino-4-methylthiazole (II), 2-amino-4,5-dimethylthiazole (III), 2-amino-4-phenylthiazole (IV), and 2-amino-4-methyl-5-bromothiazole (V), as well as 2-(*N*-methylacetamido)-4-methylthiazole (VI), and 2-acetylimino-3,4-dimethyl-4-thiazoline (VII) were recorded (curves are shown). VI, known to have a thiazole structure, shows bands at 1648 and 1542 cm.$^{-1}$; VII shows only a band at 1588 cm.$^{-1}$ I-V show 2 bands in 1650–90 and 1535–50-cm.$^{-1}$ regions, while the thiazoline band at 1588 cm.$^{-1}$ is totally absent. Thus I-V have structures analogous to VI. II, III, IV, and V show a band at 3155 cm.$^{-1}$, possibly that of NH vibration; this is absent in VI and VII. In I there are seen 3155- and 3080- and 3250-cm.$^{-1}$ bands, the origin of the last 2 being unknown. VI shows absorption max. 2750 A. (log ϵ 3.8); VII shows absorption max. 3020 A. (log ϵ 4.0). I-V show absorption max. in the area of 2680–2840 A. close to that of VI. I shows a slight band at 2960 A. (log ϵ 2.90), possibly caused by thiazoline tautomer in the EtOH soln. (3–7% estd.). No bands at 3020 A. are seen in II-V, showing the absence of thiazoline form. G. M. Kosolapoff

12/24/54

BOGOMOLOV, S.G.; SHEYNKER, Yu.N.; POSTOVSKIY, I.Ya.

Examination of the structure of sulfo acids of 2-amino-4-methyltiazole by means of infrared spectra. Izv. AN SSSR Ser. fiz. 18 no.6: N-D '54. (MLRA 8:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S.Ordzhonikidze.
(Thiazole--Spectra) (Sulfonic acids--Spectra)

SHEYNKER, Yu.N.

USSR/Physics - Spectral analysis

Card 1/2 Pub. 43 - 58/62

Authors : Sheynker, Yu. N., and Bogomolov, S. G.

Title : Infrared spectra and problems of tautomerism of heterocyclic compounds

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, page 738, Nov-Dec 1954

Abstract : The problems of tautomerism and double reactivity of heterocyclic compounds were investigated by means of infrared absorption spectra. Infrared absorption spectra (2.5 - 13μ) were obtained for hydroxy derivatives of the heterocyclic series (derivatives of pyridine, pyridazine, pyrimidine, pyrazine, triazine, thiazole, etc.) and sodium and silver salts of these derivatives as intermediate products in the reactions of these compounds.

Institution : The S. Ordzhonikidze All-Union Sc.-Res. Chem. Pharmac. Inst.

Submitted : .....

Card 2/2 Pub. 43 - 58/62

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, page 738, Nov-Dec 1954

Abstract : It was established that the hydroxy derivatives of the heterocyclic series in free state (not in reaction) have an oxo-form structure and their double reactivity is not connected with the difference in structure of the metallic salts which are the intermediate reaction products.

SHEYNKER, YU.N.

USSR/ Physics - Spectral analysis

Card 1/1 Pub. 43 - 59/62

Authors : Sheynker, Yu. N., and Peresleni, Ye. M.

Title : Oscillation spectra and the basicity of cyclic imines

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, page 739, Nov-Dec 1954

Abstract : The authors investigated the infrared and combined diffusion spectra of cyclic imines containing three to seven atoms in the cycle and their simple derivatives to determine the effect of stresses in the cycle on the optical and electrochemical properties of the substances. The change-over from relaxed molecules (multinomial cycles) into tense ones (three and four membered cycles) was seen to lead to noticeable change in the oscillation frequency of the external bonds. Data regarding the basicity of cyclic imines are included.

Institution : The S. Ordzhonikidze All-Union Sc.-Res. Chem. Pharmac. Inst.

Submitted : .....

SHEYNKER, Yu. N.

USSR/ Chemistry - Spectral analysis

Card 1/1 Pub. 43 - 60/62

Authors : Bogomolov, S. G.; Sheynker, Yu. N.; and Postovskiy, I. Ya.

Title : The structure of 2-amino-4-methylthiazole sulfonic acids explained by means of infrared spectra

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, page 740, Nov-Dec 1954

Abstract : Utilizing the infrared spectra of isomeric 2-amino-4-methylthiazole sulfonic acids and many derivatives of 2-aminothiazole the authors established the proper structure of these acids. The spectra of isomeric acids indicate that the low-fusible acid has the NH_2-group in the molecule and the high melting acid the NH group and their structures are different. The conversion of the low-melting acid into high-melting represents a regrouping of the sulfo-acid into sulfamic acid.

Institution : The S. Ordzhonikidze All-Union Sc. Res. Chem. Pharmac. Inst.

Submitted : .....

SHEYNKER, Yu. N.

USSR/Chemistry - Analytical

Card 1/1 : Pub. 151 - 30/37

Authors : Bogomolov, S. G.; Sheynker, Yu. N.; and Postovskiy, I. Ya.

Title : The structure of 2-amino-4-methylthiazolesulfonic acids. Part 2.-The structure of 2-amino-4-methylthiazolesulfonic acid analyzed by means of infrared spectra

Periodical : Zhur. ob. khim. 24/3, 539-548, Mar 1954

Abstract : The structure of 2-amino-4-methylthiazolesulfonic acid and numerous other 2-aminothiazole derivatives was determined on the basis of infrared absorption spectra. The low-fusible sulfo-acid obtained during sulfonation of 2-amino-4-methylthiazole was found to be 2-amino-4-methylthiazole-5-sulfonic acid and its isomeric high-melting acid formed from low-melting acid during heating with H_2SO_4-4-methylthiazole-2-sulfamic acid. It was also established that the product obtained from chlorosulfonation of 2-acetamide-4-methylthiazole was actually N-acetylated chloride of 5-sulfonic acid and all the sulfamides derived from acid chlorides (amides of that acid). Eight references: 3-USA; 4-USSR and 1-German (1939-1953). Tables; graphs.

Institution : All-Union Scientific Research Chemical-Pharmaceutical Institute, Moscow

Submitted : August 14, 1953

SHEYNKER, Yu. N.

SHEYNKER, YU.N

Vibrational spectra of ethylenimine and its alkyl substitution products. Yu. N. Sheinker, E. M. Peresleni, and G. I. Braz (S. Ordzhonikidze Sci.-Research Chem.-Pharm. Inst., Moscow). *Zhur. Fiz. Khim.* 29, 618–22(1955); cf. Hoffman, *et al.*, *C.A.* 45, 8889*c*.—The Raman and infrared spectra were measured of ethylenimine, 2-methylethylenimine, 2,2-dimethylethylenimine, *N*-isopropylethylenimine, *N*-*sec*-butylethylenimine, and *N*-cyclohexylethylenimine. The absorption spectra of all these compds. are shown in the interval from 2 to 13 μ. Vibration spectra are tabulated. The strain present in the 3-membered rings of 1,2-alkylenimines leads to an increase in the frequency of the valence vibrations of C-H bonds and a decrease in the characteristic frequency of the N-H bonds. Neither formation of the ring nor strain within it has any effect on the molar refraction of any of the compds. I. W. L., Jr.

USSR/ Chemistry - Analytical chemistry

Card 1/1 Pub. 22 - 27/49

Authors : Sheynker, Yu. N., and Reznikov, V. M.

Title : Infrared spectra and the structure of 2- and 4-oxypyridines and their salts

Periodical : Dok. AN SSSR 102/1, 109-111, May 1, 1955

Abstract : Employing infrared absorption spectra the authors investigated the structure of oxypridines and their salts and to determine the relation between the chemical properties of the substances and tautomerism. The data obtained regarding the structure of pyridine oxy-derivatives (in crystal state and in solutions) and their salts indicate that the reason for the double reactivity of such compounds is the ability of transferring the reaction center over the chain of conjugated bonds and is not the cause of tautomerism or difference in structure of their salts. Three references: 1 USSR, 1 USA and 1 Ger. (1907-1954). Graphs.

Institution : All-Union. Sc. Res. Chem-Pharmac. Inst. im. S. Ordzhonikidze and the Kharkov Pharmaceut. Inst.

Presented by : Academician I. L. Knunyants, December 16, 1954

IV

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

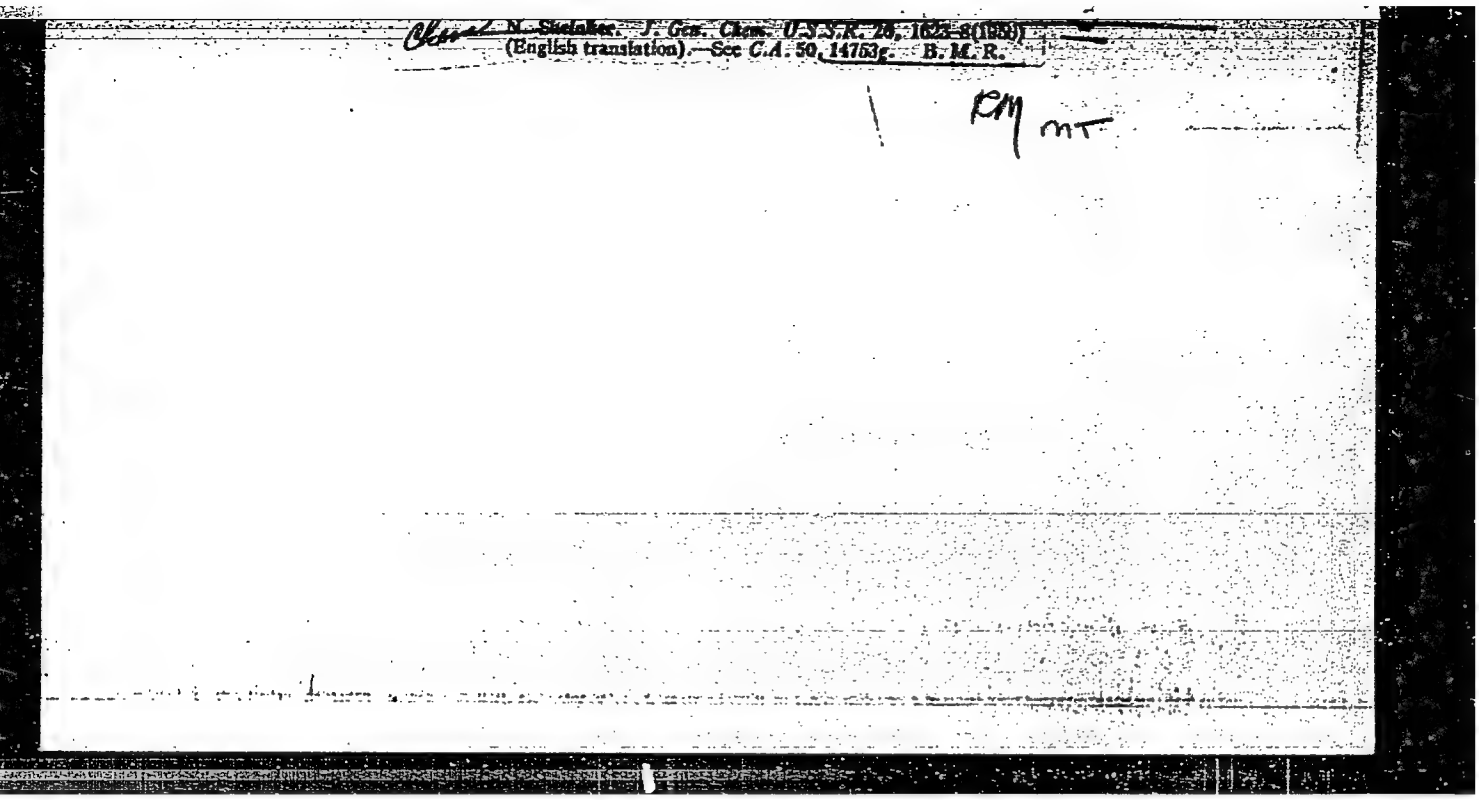
Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19127

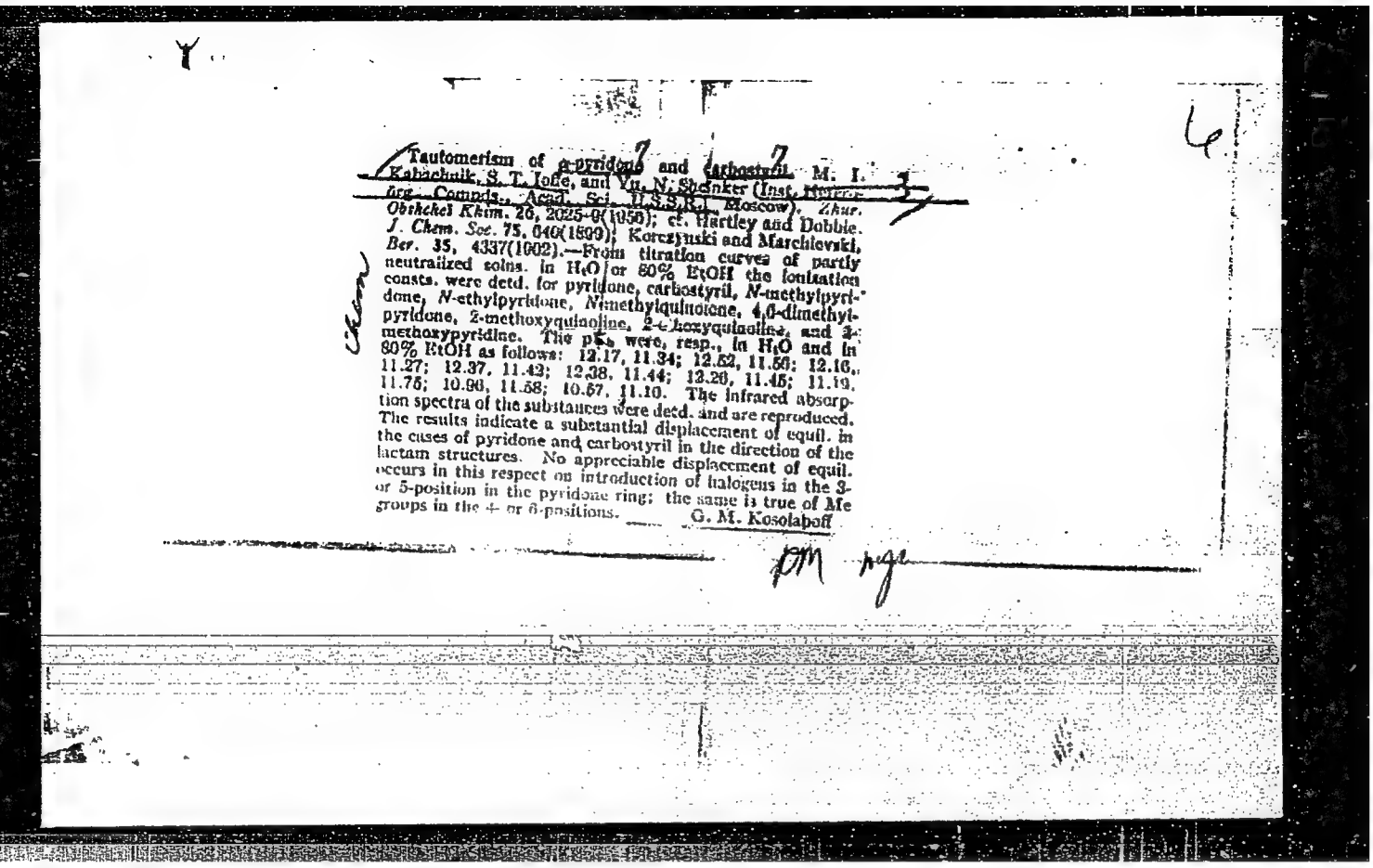
Author : Postovskiy I. Ya. Matevosyan R.O., Shelynker Yu. N.
Inst :
Title : Structure of the Product Obtained by the Interaction of Aniline with Propargylaldehyde.

Orig Pub: Zh. Obshch. Khimiyi, 1956, 26 No 5, 1443-1448

Abstract: Structure (II) C_6H_5N-----H-O is ascribed to the product
CH - CH=CH
obtained by the interaction of aniline with CH CCHO(I) (Claisen, Ber., 1903, 36, 3664) based on the study of its chemical properties and of the IK-spector. Analogical products are obtained with o-anizidine, m.p. 112-114° (from benzene), and β-naphthylamine, m.p. 124-125° (from benzene). At dehydration II yields Quinoline, and by the action of acid it is transformed into $CH_2(CH=NC_6H_5)_2$ (III). 0.1 mole I in 10cc C_6H_6 at 0° is added to 0.1

Card : 1/2 Acad Polytech Inst.





Tautomerism of α-pyridone and carbostyril. M. I. Kabachnik, S. T. Ioffe, and Yu. N. Sheinker (Inst. Heterog. Comnds., Acad. Sci. U.S.S.R., Moscow). *Zhur. Obshchei Khim.* 26, 2025-9(1956); cf. Hartley and Dobbie, *J. Chem. Soc.* 75, 640(1899); Korczynski and Marchlewski, *Ber.* 35, 4337(1902).—From titration curves of partly neutralized solns. in H_2O or 80% EtOH the ionization consts. were detd. for pyridone, carbostyril, *N*-methylpyridone, *N*-ethylpyridone, *N*-methylquinolone, 4,6-dimethylpyridone, 2-methoxyquinoline, 2-ethoxyquinoline, and 2-methoxypyridine. The pK_a were, resp., in H_2O and in 80% EtOH as follows: 12.17, 11.34; 12.52, 11.50; 12.16, 11.27; 12.37, 11.42; 12.38, 11.44; 12.20, 11.45; 11.19, 11.75; 10.90, 11.58; 10.67, 11.10. The infrared absorption spectra of the substances were detd. and are reproduced. The results indicate a substantial displacement of equil. in the cases of pyridone and carbostyril in the direction of the lactam structures. No appreciable displacement of equil. occurs in this respect on introduction of halogens in the 3- or 5-position in the pyridone ring; the same is true of Me groups in the 4- or 6-positions. G. M. Kosolapoff

SHEYNKER, Yu.N.

5

Alkaloids of the plant Leontice ewersmannii. IV. Structure of alkaloid thaspine. T. F. Plantonova, A. D. Kuzovkov, and Yu. N. Sheinker (S. Ordzhonikidze All-Union Chem. Pharm. Research Inst., Moscow). *Zhur. Obshchei Khim.* 20, 2051-6(1950); cf. *C.A.* 50, 13971b.—Thaspine (I) is *di-lactone of 3',5'-dihydroxy-3',5-dimethoxy-3-(3-dimethylaminoethyl)diphenyl-2,5'-dicarboxylic acid.* I with CrO_3 in AcOH gave $Me_2NCH_2CH_2CO_2H$. I.MeI refluxed with 10% NaOH gave *3,6-dihydroxy-3',5-dimethoxy-3-vinyldiphenyl-2,6'-dicarboxylic acid* (II), m. 237° (from Me_2CO), m. 171° (from H_2O); *di-Ag salt* was prepd. and analyzed; the acid with dil. HCl forms a *lactone*, m. above 360°. Hydrogenation of II with Raney Ni gave *3',5-dimethoxy-2',6-dihydroxy-3-ethyldiphenyl-2,6'-dicarboxylic acid*, m. 340°. II and CH_2N_2 gave *di-Me 2',3',5,6-tetramethoxy-3-vinyldiphenyl-3,6'-dicarboxylate*, m. 112–14°, which with alc. KOH gave the *free acid*, m. 208–10° (from EtOH) which with $KMnO_4$ gave *2',3',5,6-tetramethoxydiphenyl-2,3,6'-tricarboxylic acid*, m. 120–3°, on remelting, m. 233–4°, due to formation of *anhydride*. Infrared and ultraviolet spectra are shown. G. M. Kosolapoff

MADAYEVA, O.S.; SHEYNKER, Yu.N.

Certain properties of esters of p-toluolsulfonic acids of 17β-oxysteriods. Part 7. Infrared spectra of certain derivatives of the androstane and 18-N androstane series. Ahur.ob.khim.26 no.11:3201-3206 N '56. (MLRA 10:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordzhonikidze.
(Androstane--Spectra)

Infrared spectra of Vaseline suspensions of several steroids are reported: 17-methylandrostenol-3β, 17,17-dimethyl-18-norantrostanol-3β, 17,17-dimethyl-18-nor-Δ^{12}-androstenol-3β. 17,17-dimethyl-18-norandrostaneriol-3β, 12,13. Introduction of Me groups in the 17 position has little or no effect on the infrared spectra. Cleavage of p-$MeC_6H_4SO_3H$ from 3-acetate 17-tosylate of Δ^5-androstenediol-3β, 17β-occurs with retropinacol rearrangement. This yields mainly the acetate of 17-methyl-18-norandrostadienol-3β with admixt. of the acetate of 17-methyl-18-nor-$\Delta^{5,12}$-androstadienol-3β, as shown by the spectra.

Sheynker, Yu. N.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 11/35

Authors : Sheynker, Yu. N., and Pomerantsev, Yu. I.

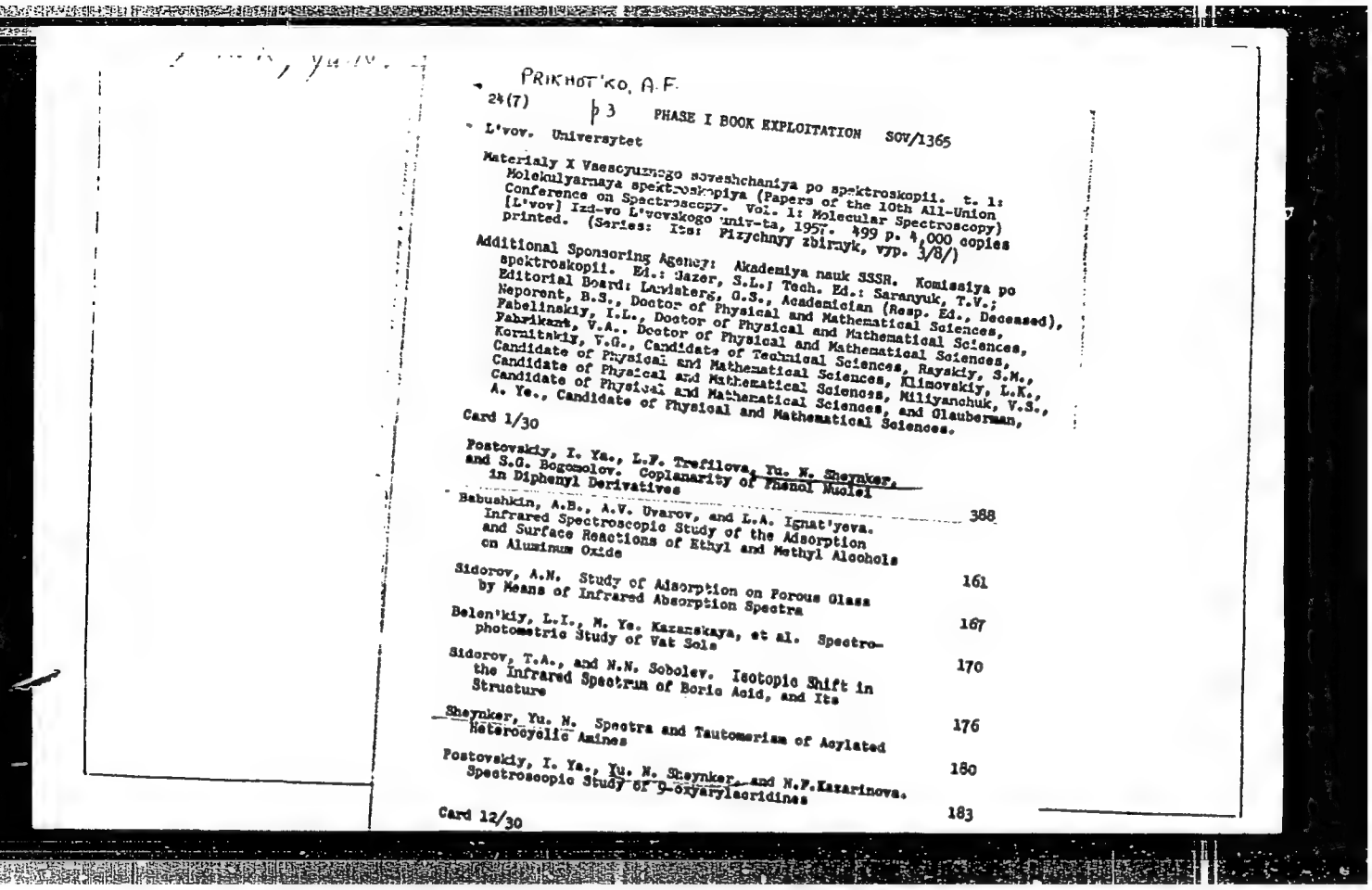
Title : About the tautomerism of certain heterocyclic compound derivatives. Part 1. Infrared spectra and structure of hydroxy derivatives of the N- heterocyclic series

Periodical : Zhur. fiz. khim. 30/1, 79-93, Jan 1956

Abstract : The derivation and study of the infrared absorption spectra of N- heterocyclic hydroxy derivatives in solid crystalline state and in solutions are described. The lactam (oxo) structure was found to be characteristic of all alpha- or gamma-monoxy derivatives both in crystalline state and in solution. The compounds investigated (pyridine, quinoline, pyrimidine, pyrazine, pyridazine, quinoxaline, phthalazine, triazine, etc.) were found to be capable of the so-called "lactim-lactam" tautomerism leading to the formation of N- and O-substituted derivatives. Twenty-seven references: 7 USSR, 1 Germ., 11 USA, 2 Swiss, 2 Turk and 4 French (1925-1955). Graphs.

Institution : Chemicopharmaceutical Inst. im. S. Ordzhonikidze, Moscow

Submitted : May 6, 1955



PRIKHOT'KO, A.F.

24(7) P3 PHASE I BOOK EXPLOITATION SOV/1365

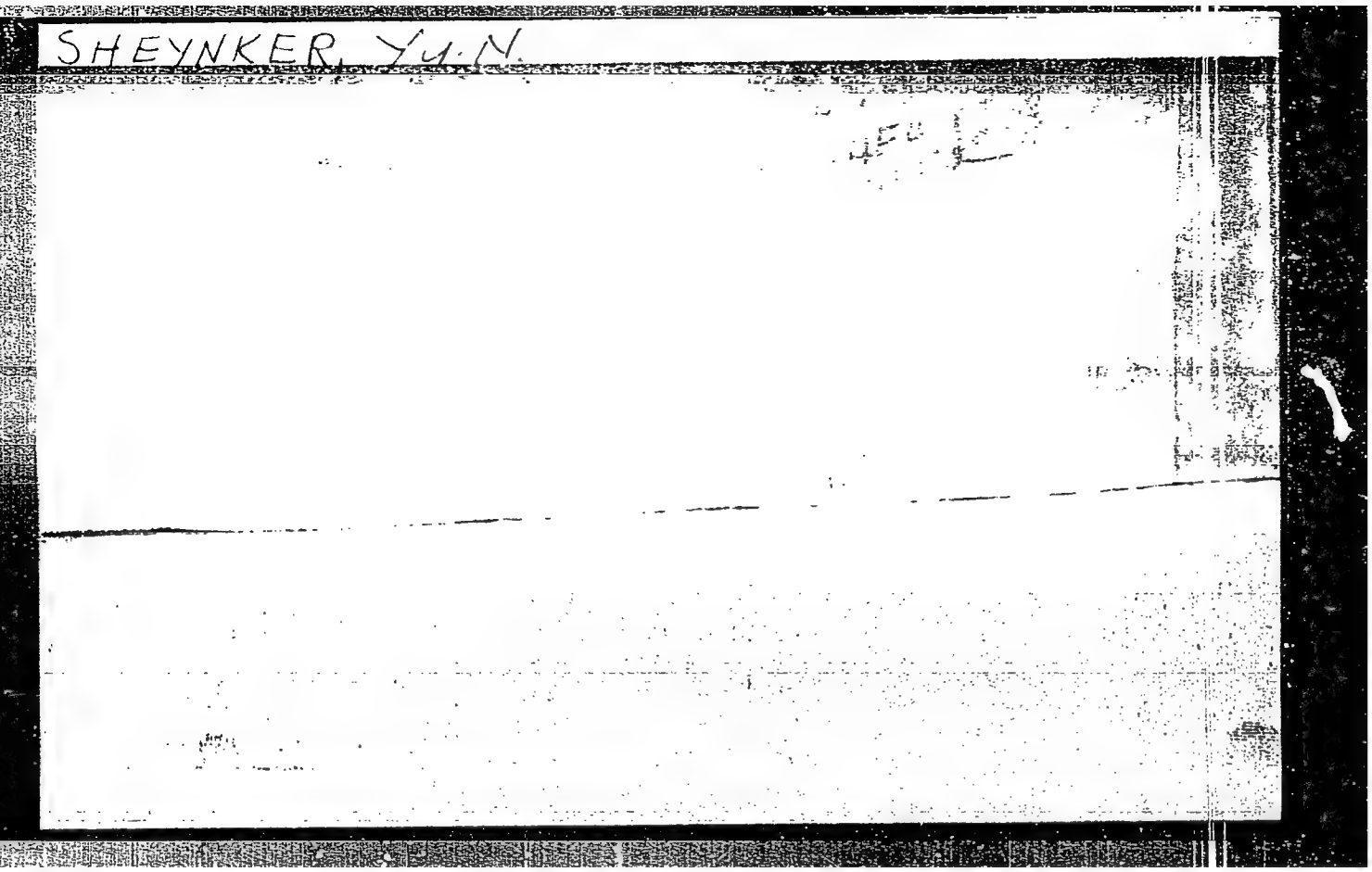
L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Lazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Lavlaterg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Card 12/30



POSTOVSKIY, I.Ya.; SHEYNKER, Yu.N.; KAZARINOVA, N.F.

Spectroscopic analysis of 9-oxyarylacridines. Fiz. sbor. no.3: 183-184 '57. (MIRA 11:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze i Ural'skiy politekhnicheskiy institut im. S.M. Kirova.

(Acridine--Spectra)

POSTOVSKIY, I.Ya.; TRUFILOVA, L.F.; SHEYNKER, Yu.N.; BOGOMOLOV, S.G.

Coplanar position of phenyl radicals in biphenyl derivatives.
Fiz. sbor. no.3:388-390 '57. (MIRA 11:8)

1. Ural'skiy politekhnicheskiy institut im. S.M. Kirova.
(Biphenyl--Spectra) (Stereochemistry)

SHEYNKER, Yu.N.; KUSHKIN, V.V.; POSTOVSKIY, I.Ya.

Tautomerism of some heterocyclic derivatives. Part 2: Infrared and ultraviolet spectra and the structure of the 2-amino derivatives of thiazole. Zhur.fiz.khim. 31 no.1:214-226 Ja '57. (MLRA 10:5)

1.Khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze, Moskva i Ural'skiy politekhnicheskiy institut im. S.M. Kirova, Sverdlovsk.
(Thiazole--Spectra) (Tautomerism)

Sheynker, Yu. N.

1-4Fl
1-4E3d

Tautomerism of some derivatives of some heterocyclic compounds. III. The spectra and structures of 3,6-dihydroxypyridazine and phthalazine derivatives. Yu. N. Sheinker, T. V. Gortinskaya, and T. P. Sycheva (S. Ordzhonikidze Chem. Pharm. Inst., Moscow). *Zhur. Fiz. Khim.* 31, 599–610(1957)(English summary); cf. *C.A.* 50, 7588*h*, 14780*h*; 51, 17455*k*.—Infrared and ultraviolet spectra were studied of 3,6-dimethoxypyridazine (I), 3,6-dimercaptopyridazine, 1,2-dimethyl-3,6-pyridazinedione, 2-methyl-6-hydroxy-3(2*H*)-pyridazinone (II), 6-methoxy-3(2*H*)-pyridazinone (III) (which has not been previously described and was obtained from 6-hydroxy-3(2*H*)-pyridazinone through its Ag salt by the action of MeI, and purified by threefold sublimation at 0.01 mm. pressure and recrystn. from water, m.p. 154°), 5,8-dihydroxyphthalazine (IV), 4-hydroxy-2-methyl-1-(2*H*)-phthalazinone, 1-methoxy-4-chlorophthalazine, and 2,3-dimethylphthalazinedione. The spectra showed that I and IV had the oxy-oxo structure in the solid state; II and III formed chains in the cryst. state, in which the mols. are connected by extra-strong H bonds (like in chelate structures), and the mols. are strongly polarized. Similar chains were not found in the crystals of IV. The m.p., solv., and acidity confirm the proposed structures.

W. M. Sternberg

SHEYNKER, Yu.N.; POSTOVSKIY, I.Ya.; VORONINA, N.M.; KUSHKIN, V.V.

Tautomerism of some derivative of heterocyclic compounds.
Part 4: Spectra and structure of benzenesulfonamides and sulfanilamides of the thiazole and thiodiazole series [with summary in English]. Zhur.fiz.khim.31 no.8:1745-1755 Ag '57. (MIRA 10:12)

1. Khimiko-farmatsevticheskiy institut im. S.Ordzhonikidze, Moskva i Ural'skiy politekhnicheskiy institut im.S.M.Kirova, Sverdlovsk.
(Tauromerism) (Benzenesulfonamide--Spectra) (Sulfanilamide--Spectra)

AUTHOR: Sheynker, Yu.N., Kuznetsova, I.K. 76-12-8/27

TITLE: On the Tautomerism of Some Derivates of Heterocyclic Compounds (O tautomerii nekotorykh proizvodnykh geterotsiklicheskikh soyedineniy). V. Spectra and Structure of Some Sulfanylamides (V. Spektry i stroyeniye nekotorykh sul'fanilamidov)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 12, pp.2656-2662 (USSR)

ABSTRACT: Reference is made to the preceding paper [Ref. 1], and by means of infrared, and, in individual cases, also of ultraviolet spectra, the structure of 2-sulfanylamides of pyridine and of pyrimidine, as well as of some sulfanylamides of the aliqyclic series (which are used as medical preparations) is investigated. The measuring method has already been described in previous works. From the data obtained it follows that in the pyridine and pyrimidine series, which have 2-sulfanylamides in the crystalline state, have an imido structure (I), (II), and are derivatives of 2-pyridomine and 2-pyrimidonine. As in cases investigated previously, this is due to the strong acidifying influence exercised by the SO_2 group on the amide group NH. Consequently, the ratio of the basic properties of the nitrogen atom outside the ring, and that of the nitrogen atom within the ring, changes in favor of the latter. It is shown that in the aqueous

Card 1/3

On the Tautomerism of Some Derivates of Heterocyclic Compounds. V. Spectra and Structure of Some Sulfanylamides

76-12-8/27

solutions the 2-sulfanylamidopyridin shows essentially an imido structure, whereas in alcohol solutions, besides the imido-form, also the amido-form is contained in substantial quantities. The latter form prevails in dioxan solutions and the content of the amido-form can be evaluated by 99%. In the case of the sulfanylamides of the pyridin, a tautomeric system is concerned, which is very close to the state of equilibrium. Further it is shown that the sulfanylamides of the alicyclic series (sulfanyliacetamid, sulfanylurea (urosulfan)), both in crystalline state, as well as in solutions, have an amido-structure. The latter because they keep the same strip-systems in infrared spectra of such solutions (alcohol, dioxan), and especially the carbonyl-strips (1700 cm^{-1}) under the conditions prevailing here. Consequently, the acid-properties of the NH-group, in spite of the strong acidifying effect of the sulfanil-group do not increase to such an extent that the amid forms (V) and (VI) become more acidiferous than the imido-forms (VII) and (VIII). The obtained data correspond to the conceptions of the acid-basic character of the amido-imido tautomeric equilibrium. It is finally shown

Card 2/3

On the Tautomerism of Some Derivates of Heterocyclic Compounds. V. Spectra and Structure of Some Sulfanylamides

that the bacteriostatic activity of the sulfanylamid-preparations cannot be correlated with the imido-structure of their molecules. There are 5 figures, and 8 references, 3 of which are Slavic.

ASSOCIATION: All-Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy Khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze, Moskva).

SUBMITTED: July 21, 1956

AVAILABLE: Library of Congress

Card 3/3

SHEYNKER, Yu.N.

AUTHOR POSTOVSKIY I.YA., TREFILOVA L.F., SHEYNKER YU.N., [redacted] 20-2-29/67
BOGOMOLOV S.G.

TITLE On Non Coplanar Nature of Phenyl Nuclei In Diphenyl Derivatives. (O nekoplanarnosti fenilnykh yader v proizvochykh difenila -Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 2, pp 347-350 (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT It was ascertained that in the crystalline diphenyl molecule the phenyl nuclei lie in one and the same plane despite a partial superposition of the hydrogen atmospheres (which are inortho-position). The coplanarity of this compound is obviously caused by special conditions of the molecule package in the crystal, on which occasion the energy of a slight sphere compression of the hydrogen atoms is compensated by the convenient plane position. At the same time it is known that in the liquid and gaseous phase the diphenyl nuclei are not coplanar. This is also true for a number of n- and n'-diphenyl-substitutes in solutions in the case of lacking substituents in O-positions. So far, however, specifications the structure of such derivatives in crystalline condition are lacking. The authors spectroscopically investigated crystals of the diphenyl ketones within the infra-red domain. Structure formulas for the substances I.-IV. are given. In the I. and III.: The electron-giving influence of the methoxyl and the amino groups on the ketone group is transmitted on diphenyl-n-anisyl-ketone and diphenyl-n-aminophenyl-ketone by phenyl

Card 1/3

On Non Coplanar Nature of Phenyl Nuclei In Diphenyl Derivatives. 20-2-29/67

cycles, whereas in the II. and IV.: This influence is transmitted on n-metoxydiphenyl-ketone and n-aminodiphenyl-phenylketone by the diphenyl system. The assumption had to be examined that in the case of a noncoplanarity of the phenyl nuclei in diphenyl the mutual influence of the metoxy-and amino-groups with the carbonyl group in the compounds II. and IV.will be smaller in consequence of the destruction of the conjugation than in the compounds I.and III. As known,the frequency of the valence fluctuation of the carbonyl group in the direction of long waves becomes more dislocated the further the -π-electron interaction of the carbonyl group with other electron-giving groups of the molecule increases. Accordingly the oscillation frequency of the carbonyl group in the compound I will have to be smaller than in the compound II. and the oscillation frequency in III.smaller than in IV. Also polarographical determinations in a dioxane solution (as far as soluble) were carried out. Furthermore the corresponding benzophones were investigated. As evident from schedule 1 the influence of the electron-giving group OCH_3 becomes manifest in the lowering of the characteristic oscillation frequency of the C=O-group. The NH_2-group has a similar effect. From the results of the infrared spectra it can be concluded that the reciprocal influence of the groups in the ketones I and II both in solutions and in crystalline condition is less distinguished by the diphenyl system than in the

Card 2/3

SHEYNKER, YU. N.

20-5-38/67

AUTHOR SHEYNKER, Yu.N.

TITLE ~~The Tautomerism~~ of Acylated Heterocyclic Amines And Its Study By Means of Spectra.
(Tautomeriya atsilirovannykh geterotsiklicheskikh aminov i yeye izucheniye s pomoshch'yu spektrov -Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 5, pp 1080-1083 (U.S.S.R.)
Received 7/1957 Reviewed 8/1957

ABSTRACT In previous works it was proved by means of spectra that α-and γ- amine derivatives of the N-heteroaromatic series exist in an amino-and not in an imino-form. This fact may be explained by the application of the rules of the acid-base equilibrium to the tautomeric amino-imino-equilibrium. The existence of heterocyclic amines in an amino form is in this connection considered to be a consequence of a considerably greater alkalinity of the extracyclic imine nitrogen atom compared to the alkalinity of the cyclic nitrogen. This causes a considerable (practically complete) shift or equilibrium in the direction of the tautomeric amino form. Herefrom there follows the possibility of an influence exercised upon the tautomeric amino-imino equilibrium by a modification of the relation of two nitrogen atoms which are responsible for tautomerism: that in the cycle and that which is extracyclic. Such a modification could be brought about by replacing a hydrogen atom of the amino group by electronegative groups of the type of acid residues. The latter could reduce the alkalinity above all of the extracyclic nitrogen immedia-

Card 1/2

SHEYNKER, Yu N

GUREVICH, A.I.; SHEYNKER, Yu.N.

Tautomerism in a series of oxyacridines and dioxybiacridyls. Khim. nauka i prom. 3 no.1:129-130 '58. (MIRA 11:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze.
(Acridine) (Biacridinium compounds)

79-28-4-54/60

AUTHORS: Suvorov, N. N., Sorokina, N. P., Sheynker, Yu. N

TITLE: Research in the Field of the Indole Derivatives (Issledovaniya v oblasti proizvodnykh indola) V. Mechanism of the E. Fischer Reaction (V.K voprosu o mekhanizme reaktsii E. Fishera)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol.28, Nr 4, pp.1090-1097 (USSR)

ABSTRACT: The conversion of aryl hydrazones of carbonyl compounds into indole derivatives (reaction according to E. Fischer) is the most important and most widely used method for the production of the latter. This reaction may be carried out by two ways: The first is by E. Fischer (Ref 2) and used acids as condensing agents (mineral acids, anhydrous zinc chloride, boron trifluoride etc.). On this occasion there is at least 1 mol condensing agent per 1 mol aryl hydrazone - practically a great excess of it is taken. The second method is by A. Ye. Arbuzov (Ref 3) and is based on the catalytic decomposition of the aryl hydrazones. In both cases the formation of the indole derivative takes place under precipitation of 1 mol ammonia (in the case of the method according to E.

Card 1/4

Research in the Field of the Indole Derivatives. V. Mechanism of the E. Fischer Reaction

Fischer as ammonium salt) from aryl hydrazone. This precipitation takes place due to a previous intramolecular transposition of aryl hydrazone. The mechanism of this interesting reaction was already investigated in technical publications (Refs 4, 5). G. and R. Robinson (Ref 5) divided the conversion of aryl hydrazone into the corresponding indole derivative into three stages:

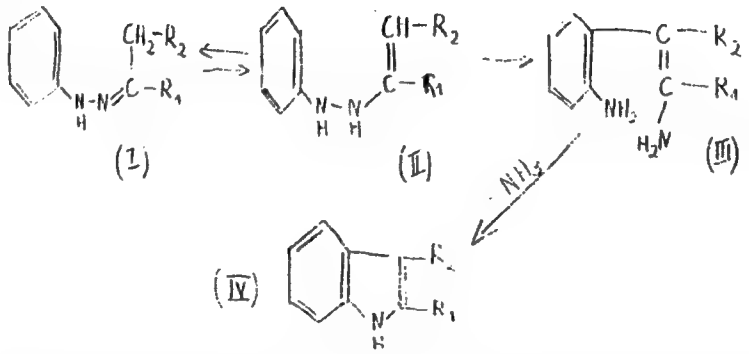
1) Tautomeric conversion of aryl hydrazone (I) into the corresponding unsaturated hydrazine (II).

2) Ortho-benzidine transposition of the hydrazo compound (II) into the unsaturated diamine (III).

3) Formation of the indole ring (IV) by precipitation of one ammonia molecule.

By means of an appropriate process (reaction carried out according to E. Fischer in acetic anhydride as medium and alkaline saponification of the diacetyl derivative of the unsaturated hydrazine) the authors succeeded in dividing this reaction into three stages which agree with the three stages of the mechanism suggested by G. and R. Robinson.

Research in the Field of the Indole Derivatives. V. Mechanism of the E. Fischer Reaction



Both intermediate products could be isolated in acetylated form from phenylhydrazone of the methyl-ethyl ketone used as example. Their structure and the conditions of their conversion into the corresponding indole derivative were investigated. On this occasion a direct proof was obtained for the correctness of the scheme by G. and R. Robinson. It was found that the formation of the unsaturated hydra-

Research in the Field of the Indole Derivatives, V. Mechanism of the [illegible]

zine takes place under the presence of acid catalysts; ortho benzidine transposition does not absolutely need this catalysis but can be made also in the alkaline medium. The formation of the indole ring which can be catalyzed by hydrogen ions takes place very rapidly. It can be achieved also by thermal means.
The carrying out of the mentioned formation reactions is described in detail in an experimental part. There are 2 figures and 26 references, 3 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze
(All-Union Chemical Pharmaceutical Scientific Research Institute imeni S. Ordzhonikidze)

PRESENTED: March 11, 1957

SUBMITTED: April 13, 1957

Card 4/4

76-32-2-24/38

AUTHORS: Sheynker, Yu. N. , Postovskiy, I. Ya.

TITLE: The Tautomerism of Some Derivatives of Heterocyclic Compounds (O tautomerii nekotorykh proizvodnykh geterotsiklicheskikh soyedineniy) VI. Spectroscopic Data on the Structure of 9-(p-Oxyphenyl)- and 9-(p-Oxystyryl)Acridine (VI. Spektroskopicheskiye dannyye o stroyenii 9-(p-oksifenil)- i 9-(p--oksistiril)-akridinov)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 2, pp. 394-403 (USSR)

ABSTRACT: The following investigations were carried out: absorption spectra in the ultraviolet, visible and infrared range of 9-(p-oxyphenyl)- and 9-(p-oxystyryl)-acridine, as well as the spectra of their methyl-derivatives which correspond to the standard tautomeric oxy- and oxo-forms. The ultraviolet spectra were obtained by means of the СФ-4 spectrophotometer for alcohol- and alcohol-water solutions (in the latter case in acidous and basic medium). The oxy-compounds them-

Card 1/4

The Tautomerism of Some Derivatives of Heterocyclic Compounds. VI. Spectroscopic Data on the Structure of 9-(p-Oxyphenyl)- and 9-(p-Oxystyryl)Acridine

selves were also taken in the mixture dioxane-heptane (1 : 1). The infrared spectra were obtained for substances in crystalline state by means of the infrared spectrometer ИКС-11. A comparison of the spectra shows that the 9-oxyarylacridines in solutions as well as in crystalline state are close to their spectra according to the corresponding methoxy-derivatives and essentially differ from N-methyl-quino-acridanes. Thus the spectral data completely agree with those of the chemical and polarographic investigation and prove that the 9-oxyarylacridines are actually oxycompounds. The closeness (within the ultraviolet and visible range they almost coincide) of oxy- and methoxycompound spectra make it possible not only to refute a quinoacridane- but also the third possible structure for the 9-oxyacrylacridines which corresponds to the internal structure of the dipolar ion type (V, VI). The important separation of charges existing with internal ion structure as well as the impossibility of such a separation in methoxy derivatives would entrain a great difference of spectra (especially ultraviolet ones), which, however, was not observed. Therefore the experimental data do not agree with the assumption of an internal ion structure. This final

The Tautomerism of Some Derivatives of Heterocyclic Compounds. VI. Spectroscopic Data on the Structure of 9-(p-Oxyphenyl)- and 9-(p-Oxystyryl)Acridine

conclusion can also be proved by the comparison of the ultraviolet spectra of the compounds investigated with the acridine spectrum in neutral, acidous and basic medium. Concluding it can be assumed that the changes in the ultraviolet spectrum of the compounds investigated first of all represent the changes in the acridine nucleus of the molecule. The data of the infrared spectra show that in the oxycompounds investigated a remarkable polarization of molecules takes place. This consists in a certain displacement of the electrons from the O-H binding to the nitrogen atom through the system of double--bonds of the molecule and leads to the formation of very stable intermolecular hydrogen bonds O -H - N. The OH bond therefore in the spectra up to 2500-2600 cm is displaced, which is characteristic only for very stable hydrogen bonds in "pincer-shaped" structures with a clearly expressed polarization of the bonds. - It is shown that the difference between the 9-(p-oxyaryl)-acridine and the γ-oxyderivatives of aromatic N-heterocycles which are present in form of oxy-

76-32-2-24/38

The Tautomerism of Some Derivatives of Heterocyclic Compounds. VI. Spectroscopic Data on the Structure of 9-(p-Oxyphenyl)- and 9-(p-Oxystyryl)Acridine

compounds can be explained by taking into account the influence of steric factors on the stability of the one or the other tautomeric form of the molecule investigated. Possibly also the stability of the phenol-system plays a certain part in the stabilization of the oxy-form. There are 7 figures, and 9 references, 4 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze, Moskva (All-Union Scientific Chemical Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow), Ural'skiy politekhnicheskiy institut im. S. M. Kirova, Sverdlovsk (Ural Polytechnical Institute imeni S. M. Kirov, Sverdlovsk)

SUBMITTED: November 26, 1956

1. Acridines--Spectra 2. Acridines--Structural analysis
3. Spectrophotometers--Performance

Card 4/4

AUTHORS: Sheynker, Yu. N., Peresleni, Ye. M. SOV/76-32-9-25/46

TITLE: The Vibration Spectra and Alkalinity Constants of Alkylene Imines (Kolebatel'nyye spektry i konstanty osnovnosti alkileniminov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 9, pp 2112-2118 (USSR)

ABSTRACT: The authors investigated the following cyclic imines with 3 to 7 atoms in the ring: ethylene imine, trimethylene imine, pyrrolidine, piperidine, and hexamethylene imine. A table lists the boiling points, refraction of light, density, mole refraction (found and calculated), and alkalinity constants of these compounds. The Raman spectra in CCl_4 and hexane were measured with the ISP-51 spectrograph, and the infra-red absorption spectra of 2,5 to 15 μ with the ISP-14C and IKS-11 spectrographs. For several substances the range 2,5 to 5,5 μ was also measured using quartz and lithium fluoride prisms. The absorption curves are reproduced in a figure. The most important results are: Rings with smaller number of atoms have higher C-H frequencies and lower N-H frequencies. No correlation is

Card 1/2

The Vibration Spectra and Alkalinity Constants of Alkylene Imines

observed between the position of the N-H frequencies in the spectra and the basicity. The dependence of the basicity upon the number of atoms in the ring cannot be explained in terms of steric factors. In the liquid state the alkylene imines are bonded together by hydrogen bonds. There are 1 figure, 1 table, and 11 references, 3 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze, Moskva (Moscow All-Union Chemical and Pharmaceutical Scientific Research Institute imeni S. Ordzhonikidze)

SUBMITTED: April 12, 1957

Card 2/2

5(3)

AUTHORS: Sheynker, Yu. N., Ambrush, Ivan, Kochetkov, N. K. SOV/20-123-4-38/53

TITLE: Acid Properties of 3-Acyl Pyrazoles (O kislotnykh svoystvakh 3-atsilpirazolov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 4, pp 709 - 712 (USSR)

ABSTRACT: 3-acyl pyrazoles have properties of weak acids (Ref 1). To explain this the authors assumed that the salt formation is accompanied by a tautomeric displacement of the double bonds. The aromatic pyrazole system is supposed to be disturbed and O-metal derivatives formed (Scheme I). The well known theorem that the oxygen atom is more strongly negative than the nitrogen atom, which causes the negative charge to be mainly concentrated on the oxygen atom, tends to prove this. An earlier investigation (Ref 6) in the laboratory of the authors has shown that in the ultraviolet spectra of 3-acyl pyrazoles on the transition from a neutral to an alkaline medium a considerable batho-chromic displacement occurs. This would tend to show changes of the system of π-electrons of the molecule. With 3,5-di-

Card 1/3

phenyl-4-bromo pyrazole which is also acidic, but incapable of the above tautomeric displacement, no displacement in the spectrum occurred (Ref 7). A second possibility (Scheme II) of the acidity in question is that the N-H bond in the pyrazole nucleus is polarized, which makes possible the separation of hydrogen as proton. This may occur due to the action of the electron acceptor effect of the carbonyl group of the acyl radical linked with the nucleus (Refs 8,10). After the first explanation (Ref 6) had not made possible a definite choice between scheme (I) and (II), the authors investigated the infrared spectra of the acyl pyrazoles and their metal derivatives. Figure 1 gives the results obtained. They caused the authors to completely drop the assumption that the salt formation of the acyl pyrazoles leading to the formation of O-metal derivatives (Scheme I) takes place. In connection herewith also the earlier assumption (Ref 6) of a tautomerism of the 3-acyl radicals is dropped. It becomes clear that as far as there is a carbonyl group in the metal derivatives of the 3-acyl pyrazoles the salt formation of these compounds is connected with the polarization increase of the N-H formation of the pyrazole nucleus under the electron

Acid Properties of 3-Acyl Pyrazoles SOV/20-123-4-50/53

acceptor effect of the acyl group (Scheme II). Apparently the disturbance of the aromatic pyrazole nucleus, in spite of the high electronegativity of the oxygen atom, represents such a great hinderance that salt formation with the nitrogen atom is an energetically advantageous process. The mentioned bathochromic displacenent is probably connected with a certain deformation of the system of π-electrons of the pyrazole nucleus. This is also proved by the above-mentioned displacement of the bands of the C=O group in the spectra of the 3-acyl pyrazole salts. There are 1 figure and 13 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: July 1, 1958, by A. N. Nesmeyanov, Academician

SUBMITTED: June 25, 1958

Card 3/3

MADAYEVA, O.S.; SEROVA, N.A.; CHETVERIKOVA, L.S.; SHEYNKER, Yu.N.; KICHENKO, V.I.

Investigation of some saponin-bearing plants for their content steroid saponin. Trudy VILAR no. 11:229-236 '59. (MIRA 14:2)
(SAPONINS) (BOTANY, MEDICAL)

YAKHONTOV, L.N.; KOLPAKOVA, V.V.; SHEYNKER, Yu.N.; PERVACHEVA, T.D.

Scientific research in the institutes of the Czechoslovak Republic.
Med.prom. 13 no.11:55-58 N '59. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevtsevticheskiy institut imeni S. Ordzhonikidze.
(CZECHOSLOVAKIA--PHARMACEUTICAL RESEARCH)

YAKHONTOV, L.N.; KOPLAKOVA, V.V.; SHEYNKER, Yu.N.; PERVACHEVA, T.D.

Research at institutes of the Czechoslovak Republic. Med.prom. 13 no.12:52-55 D '59. (MIRA 13:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze.
(CZECHOSLOVAKIA--CHEMISTRY, MEDICAL AND PHARMACEUTICAL)

(3)

AUTHORS: Suvorov, N. N., Sorokina, N. P., Sheynker, Yu. N. SOV/79-29-3-49/61

TITLE: Investigations in the Field of Indole Derivatives (Issledovaniya v oblasti proizvodnykh indola). VI. The Mechanism of E. Fischer's Reaction. Investigation of the Transformations of the Methylphenylhydrazone of the Methylethyl Ketone (VI. Mekhanizm reaktsii E. Fishera. Izucheniye prevrashcheniy metilfenilgidrazona metiletilketona)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 979-985 (USSR)

ABSTRACT: The authors showed earlier that the phenylhydrazone of methylethyl ketone gives in the case of heating with the acetic acid anhydride in the presence of n-toluene sulfo acid the 2-(N,N'-diacetyl-β-phenylhydrazine)-butene-2 in a high yield. This compound is the diacetyl derivative of the enhydrazine, the first intermediate product of Fischer's reaction (Ref 1). The problem of the behavior of the methylphenylhydrazone of the methylethyl ketone (1) under analogous conditions was of theoretical interest. The theoretical assumption by the authors that the last reaction is bound to proceed differently from that with the not substituted phenyl-

Card 1/3

Investigations in the Field of Indole Derivatives. VI. The Mechanism of E. Fischer's Reaction. Investigation of the Transformations of the Methylphenylhydrazone of the Methylethyl Ketone

SOV/79-29-3-49/61

hydrazone was experimentally confirmed. By means of distillation in vacuum, the chromatography on aluminum oxide, and repeated re-crystallization five compounds could be separated from the product obtained in the case of boiling of the methylphenylhydrazone of the methylethyl ketone with the acetic acid anhydride in the presence of n-toluene sulfo acid. One compound turned out to be an N-methyl acetanilide (II), the other one a β-acetyl-α-methyl-α-phenylhydrazine (III). The formation of these products is explained by the low stability of the N-N- and C-N bonds. The other three compounds were isomeric to one another. They all form 2,4-dinitro-phenyl-hydrazones - a fact which points out the presence of a carbonyl group. The elementary composition, the capability of forming red picrates, as well as their infrared spectra permit the assumption that these compounds are acetyl-1,2,3-trimethyl-indole-isomers and differ from one another only by the position of the acetyl group in the benzene ring. The two figures show the infrared and ultraviolet absorption spectra of the compounds obtained.

Card 2/3

Investigations in the Field of Indole Derivatives. VI. The Mechanism of E. Fischer's Reaction. Investigation of the Transformations of the Methylphenylhydrazone of the Methylethyl Ketone

SOV/79-29-3-49/61

There are 2 figures and 6 references, 3 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Scientific Chemico-pharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: February 6, 1958

Card 3/3

5(3)

AUTHORS: Levshina, K. V., Chizhov, A. K., Sheynker, Yu. N., Sergiyevskaya, S. I. SOV/79-29-4-31/77

TITLE: Sulfonic Esters of the Cyclohexane Diols and the 1,4-Butane Diol (Sul'fonovyye efiry tsiklogeksandiolov i 1,4-butandiola)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1184-1188 (USSR)

ABSTRACT: Some alkyl sulfonic esters of aliphatic diols proved to be useful active agents against some kinds of cancer. The authors had to decide whether the amount and structure of the radical of sulphur had any effect on the biological properties of the sulfonic esters of 1,4-butane diol, and whether the diol necessarily belonged to the aliphatic series. Alkyl sulfonic esters of 1,4-butane diol with the radicals C_2H_5, C_3H_7, cyclo-C_6H_{11} and alkyl sulfonic esters of the isomeric cyclohexane diols (1,2;1,3;1,4) were synthesized. All these compounds were obtained through a transformation of the corresponding sulfochlorides with the diols in water-free benzene and in the presence of triethyl amine. The synthesis of the sulfochlorides was carried out according to references 2 and 3. The initial

Card 1/3

Sulfonic Esters of the Cyclohexane Diols and the 1,4-Butane Diol

cyclohexane diols were prepared by catalytic hydrogenation of the corresponding bivalent phenols. Particular interest was caused by the alkyl sulfonic esters of the 1,4-cyclohexane diol, since they are structurally closest to the highly active esters of 1,4-butane diol. For this reason not only methane, but also ethane and propane sulfonates were obtained. The mixture of stereo-isomeric 1,4-cyclohexane diols was separated by recrystallization into cis- and trans-compounds. Starting from the cis- and trans-diols two series of alkyl sulfonates were obtained. The assumed cis- and trans-forms, however, had identical melting points and physicochemical properties. Their infrared absorption spectra were identical as well, while those of the initial 1,4-diols and the isomeric alkyl sulfonates of the 1,2- and 1,3-cyclohexane diol were different (Figs 1,2). Thus it was proved that only one product forms by the reaction of the corresponding alkyl sulfochlorides with cis- and trans-1,4-cyclohexane diols, and that, consequently, an inversion of the less stable form into the stabler one takes place in the course of the reaction. Since the change of the alkyl group in

Sulfonic Esters of the Cyclohexane Diols and the 1,4-Butane Diol

the synthesized 1,4-alkyl sulfonates of the cyclohexane (methyl-, ethyl, propyl sulfonates) does not cause any sizable changes in the spectrum (Fig 3), it may be assumed that various alkyl sulfonates exhibit the very same configuration, and that the form in question is the stable trans-form. The biological properties of the compounds obtained generally correspond to those of "milerane" (Mileran). There are 3 figures, 1 table, and 8 references, 3 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Scientific Chemopharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: February 10, 1958

SOV/79-29-8-60/8

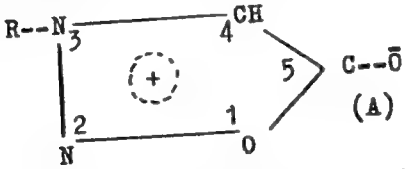
5(3)

AUTHORS: Yashunskiy, V. G., Vasil'yeva, V. F., Sheynker, Yu. N.

TITLE: On the Aromatic Properties of Sydnones

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2712-2718 (USSR)

ABSTRACT: Among the so-called mesoine compounds the sydnones are of particular interest since they are highly reactive. Of special importance is their capacity of replacing the hydrogen in position 4 (Ref 2), especially by chlorine and bromine (Refs 2, 3).



On the strength of these data it was assumed that the sydnones are of aromatic nature. In the pentacyclic ring there are totally 7 π electrons in the state 2pZ; one of them may be given to the exocyclic oxygen atom so that a certain negative charge concentrates on it, while 6 π electrons remain in the ring which contains a great positive charge. These latter 6 π electrons form

Card 1/3

On the Aromatic Properties of Sydnones

the aromatic system. However, experimental data hitherto obtained do not suffice to confirm this assumption. In this connection the present investigations were carried out. The authors sulphurized a series of sydnones with dioxan-sulphotrioxide in a dichloroethane solution at 20-40°. The reaction took place with the 3-phenyl-, 3-(p-methoxyphenyl)-, 3-(p-ethoxyphenyl)-, 3-(m-chlorophenyl)-, and 3-ethylsydnone. The three latter compounds have hitherto been unknown. They were obtained by reaction of the corresponding N-nitroso-α-amino acids with the anhydride of acetic acid. The treatment of the reaction mass after sulphurization was the usual one. The sulphonic acids were separated out in the form of their barium salts from which the benzylthiuronium derivatives of the acids were prepared. The second reaction characteristic of aromatic compounds which was carried out here was the mercurization reaction. During the treatment of the aqueous-alcoholic solution of the 3-phenylsydnone with $HgCl_2$ two compounds were separated:

4-chloro-(3-phenylsydnone)-mercury and di-4-(3-phenylsydnone)-mercury. During the mercurization of the 3-phenylsydnone with mercury acetate a considerable quantity of 4-acetatemercury-3-phenylsydnone was separated which was then transformed,

with salt solution, into the chloromercurysydnone and its symmetric derivative. The easiness with which the hydrogen atom in the sydnones can be replaced by the sulpho group and mercury thus confirms the aromatic nature of these compounds. Another factor which indicates an aromatic character are the infrared absorption spectra of the sydnones. The presence of the spectral bands corresponding to the carbonyl group is therefore not in agreement with the structural formula of the sydnones hitherto assumed. There are 1 figure and 7 references, 1 of which is Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Scientific Chemo-pharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: July 5, 1958

SOV/76-33-2-10/45

5(4)

AUTHORS: Sheynker, Yu. N., Postovskiy, I. Ya., Voronina, N. M.

TITLE: The Tautomerism of Several Heterocyclic Derivatives (O tautomerii nekotorykh proizvodnykh geterotsiklicheskikh soyedineniy). VII. Spectra and Structures of the Oxy and Mercapto Derivatives of Thiazole, Thiadiazole, and Triazole (VII. Spektry i stroyeniye oksi- i merkaptoproizvodnykh tiazola, tiadiazola i triazola)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2, pp 302 - 309 (USSR)

ABSTRACT: In continuation of previous work (Ref 1) the authors investigated the effect of the sulfur atom upon the relation between oxy and oxo tautomeric forms with the purpose of finding regularities corresponding to those reported in reference 1. The structures of 2-oxy and mercapto derivatives of thiazoles, thiadiazoles, and triazoles as well as the structures of 2-oxy- and 2-mercapto-1,3,4-triazoles were studied using infra-red and ultra-violet spectra. A IKS-11 apparatus was used for the infra-red studies while a SF-4 spectrophotometer was used for the ultra-violet studies. The

Card 1/3

The Tautomerism of Several Heterocyclic Derivatives.VII. SOV/76-33-2-10/45
Spectra and Structures of the Oxy and Mercapto Derivatives of Thiazole, Thiadiazole, and Triazole

synthesis of the thiazole compounds was carried out by V. V. Kushkin. Among the synthetic methods used were those by Tscherniak (Chernyak)(Ref 8), Hantzsch (Ganch)(Ref 2), the modified method of Stolle and Fehrenbach (Shtolle and Ferenbakh) (Ref 9), and the methods of Busch (Bush)(Ref 13), and Widman (Vidman)(Ref 10). The experimental results show (Figs 1,2) that an oxo and not an oxy form is present in the oxy compounds investigated, which have crystalline form. The appearance of a high-frequency band of the C=O bond on one side and a low-frequency band on the other indicates that in the crystalline state the carbonyl groups of some oxy derivatives only partially participate in the formation of an inter-molecular hydrogen bond -NH ... O=C. It is possible that a hydrogen bond of the type -NH .. Hal will form when a halogen atom is present in the 5 position of the oxo and thion compounds. The infra-red spectra indicate that a thion and not a thiol form of the 2-mercapto derivatives is present in the thiazoles and triazoles. Dimercapto thiadiazole

Card 2/3

possesses a thion-thiol from, i.e., it is a 5-mercapto thiadiazole-thion-2 and corresponds to the derivatives of the pyridazines and phthalazines, which are explained in terms of the system -CX-NH-NH-CX- (X=S,O). The sulfur atom does not change the acid and alkali properties of the tautomeric azol forms (corresponding to the heterocyclic compounds with a -CH=CH- group in place of the S atom). There are 6 figures and 13 references, 3 of which are Soviet.

ASSOCIATION: Khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze Moskva(Chemical-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow)
Ural'skiy politekhnicheskiy institut im. S. M. Kirova Sverdlovsk (Ural Polytechnical Institute imeni S. M. Kirov,Sverdlovsk)

SUBMITTED: July 4, 1957

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SOV/76-33-4-21/32

5(4)

AUTHORS: Gurevich, A. I., Sheynker, Yu. N.

TITLE: On the Tautomerism of Some Derivatives of Heterocyclic Compounds (O tautomerii nekotorykh proizvodnykh geterotsiklicheskikh soyedineniy). VIII. Infrared and Ultraviolet Spectra and the Structure of Oxyacridines and Dioxybiacridyls (VIII. Infrakrasnyye i ul'trafioletovyye spektry i stroyeniye oksiakridinov i dioksibiakridilov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 4, pp 883-892 (USSR)

ABSTRACT: In previous papers (Refs 1-4) it was shown that the monoxy derivatives of various N-containing heterocycles exhibit an oxo and not an oxy form, when in solution. The tautomerism of the dioxybiacridyls synthesized by the authors (Ref 8) was hitherto not investigated. Because of several contrasting data found in publications, a thorough investigation of tautomerism in oxyacridines (II) is also of interest. For this purpose in the case under review, the authors investigated the infrared absorption spectra of the substances in the crystalline state, and the ultraviolet and the visible absorption spectrum in solutions with solvents of different polarities.

Card 1/3

On the Tautomerism of Some Derivatives of Heterocyclic Compounds. VIII. Infrared and Ultraviolet Spectra and the Structure of Oxyacridines and Dioxybiacridyls

The infrared absorption spectra were obtained on the spectrometer IKS-11, and the ultraviolet and the visible absorption spectra on the spectrophotometer SF-4. The method of synthesizing all the isomeric oxy- and methoxy acridines, as well as the dioxy- and dimethoxybiacridyls had already been described (Ref 8). The results obtained are tabulated (Tables 1, 2) along with some spectral curves (Figs 1-7). It was found that in the crystalline state, 4-oxyacridine and 4,4'-dioxy-9,9'-biacridyl have an oxy structure with an intramolecular hydrogen bond OH...N. The other compounds (I) and (II) (except acridone-9) have likewise an oxy structure, but with a very strong intermolecular hydrogen bond OH...N and a strong molecular polarization. To be true, these bonds may possibly occur as hybrid ions. An oxy-oxo tautomerism was observed in the solutions of 1- and 3-oxyacridine and 1,1'- and 3,3'-dioxy-9,9'-biacridyl. 4-oxyacridine does not exhibit any tautomerism, whereas in the case of 2-oxyacridine a tautomerism was observed under the participation of oxy- and hybrid ion form. Acridone-9 is completely in the oxo-form even when in nonpolar solutions. A special case was offered by 4-oxy acridine, i.e. the oxy-

On the Tautomerism of Some Derivatives of Heterocyclic Compounds. VIII. Infrared and Ultraviolet Spectra and the Structure of Oxyacridines and Dioxybiacridyls

form is stabilized by an additional intramolecular hydrogen bond. The necessary conditions for an oxy-oxo tautomerism are complied with in the solutions of 2,2'-dioxy-9,9'-biacridyl, in which connection the required coplanarity of the molecule cores (corresponding to the oxo-form) is explained without taking into consideration any steric hindrance. There are 7 figures, 2 tables, and 16 references, 6 of which are Soviet.

ASSOCIATION: Khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze Moskva (Chemico-pharmaceutical Institute imeni S. Ordzhonikidze Moscow)

SUBMITTED: October 1, 1957

SOV/76-33-8-26/39

5(4)
AUTHORS: Sheynker, Yu. N., Pomerantsev, Yu. I.

TITLE: On the Tautomerism of Some Heterocyclic Compound Derivatives. IX. Structure of the Salts of Oxyderivatives of the Heterocyclic Series

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 8, pp 1819-1829 (USSR)

ABSTRACT: Investigations of the infrared spectra (IS) of metallic salts (MS) of some heterocyclic oxycompounds were carried out, the latter being mainly crystalline or, in some cases, dissolved in D_2O or ethanol. The (IS) were photographed by a spectrometer IKS-11 (NaCl-prism). By comparing the (IS) of the salts of monocompounds with the (IS) of the initial oxycompounds as well as of the derivatives methylated at the nitrogen- or oxygen atom (according to the two possible structural forms), it was possible to discuss the presence of an oxy- (or lactim-) structure. Inter alia, the following observations were made: The (MS) investigated contain, both in the crystalline and dissolved states, (IS) without the spectral band of the carbonyl group. They exhibit, for instance, the waves 1600,

Card 1/3

On the Tautomerism of Some Heterocyclic Compound Derivatives. IX. Structure of the Salts of Oxyderivatives of the Heterocyclic Series

1542, 1480, 1430, and 1340 cm^{-1} (Li-, Na-, K-, Ag-, and Ba-salts of 2-oxypyridine), which suggests a lactim structure (LS). The (LS) is characteristic not only of the salts of monoxyderivatives but also of the salts of the polyoxycompounds, such as dioxyquinoxaline, cyanuric acid, and barbituric acid, etc. The formation of (MS) of the α- and γ-oxyderivatives of the N-heterocyclic series comes about by a molecule shift from the lactam- to the lactim structure. In all compounds investigated, the metal atom was added to the oxygen atom, not the nitrogen atom (of the ring). (MS) of metals of different electropositiveness were used. If there were any carbonyl-amide groups in the molecule of the oxycompound, the salt formation took place by a gradual enolization (E) of these groups by a gradual exchange of the hydrogen atoms (H) with the metal atoms (Me). With compounds of a combined oxy-oxo structure (N-dioxyderivatives of pyridazine and phthalizine) the H → Me exchange was restricted to the oxy-group while there was no (E) in the second carbonyl-amide group. The excessive negative charge (caused by the polarization of the O-Me bond) in the crystalline salts, as well as the

On the Tautomerism of Some Heterocyclic Compound Derivatives. IX. Structure of the Salts of Oxyderivatives of the Heterocyclic Series

total negative charge of the salt anions in the solutions, is concentrated at the oxygen atom, not the nitrogen atom (of the ring). The capacity of (E) in the salt formation of the compounds investigated is not due to the heterocyclic structure but also occurs in the case of carbonylamide groupings in an open chain. There are 8 figures and 18 references, 13 of which are Soviet.

ASSOCIATION: Khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze Moskva
(Chemico-pharmaceutical Institute imeni S. Ordzhonikidze, Moscow)

SUBMITTED: February 11, 1958

SOV/76-33-9-33/37

5(4)

AUTHORS: Sheynker, Yu. N., Peresleni, Ye. M., Zosimova, N. P., Pomerantsev, Yu. I.

TITLE: On the Tautomerism of Some Derivatives of Heterocyclic Compounds. X. The Tautomerism of Acylated Heterocyclic Amines

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 9, pp 2096 - 2109 (USSR)

ABSTRACT: The simplest method of changing the amino-form (I) into the imino-form (II) of heterocyclic amines is based on the substitution of an electronegative group (an acid residue, for example) for the hydrogen atom of the amino group. Supposing that the introduction of such acidifying groups of various electronegativity will produce also a proportional variation in the equilibrium between (I) and (II) of the resultant compounds, the acylated amines of the following heterocycles were investigated: pyridine, thiazole, thiadiazole, quinoline, pyrimidine, benzothiazole, and acridine. The residues of the following acids were introduced: acetic, benzoic, monochloro acetic, dichloro acetic, trichloro acetic, trifluoro acetic, methane sulphonic, sulphanilic, benzoyl sulpho, and nitric acid.

Card 1/3

On the Tautomerism of Some Derivatives of Heterocyclic Compounds. X. The Tautomerism of Acylated Heterocyclic Amines

SOV/76-33-9-33/37

The authors determined the structure of the resultant compounds as well as their tautomeric form in solutions (water, ethanol, dioxane, n-heptane) from the infrared absorption spectra (spectrometer of the IKS-11 type) in crystalline state and from the ultraviolet absorption spectra (spectrophotometer of the SF-4 type) in solution. The spectra of the amides obtained were compared with their methyl derivatives (with fixed amino- or imino structure), and the characteristic bands in the infrared spectrum of the pure substance were then examined. The compounds under investigation and their melting points are listed. The infrared spectra (Figs 1-3, 7) indicate that all compounds with substituents of strongly acidifying properties exhibit (II) as may be found even better in the ultraviolet spectra (Figs 4-6). The amount of (II) increases with the solvent polarity and depends on the nature of the heterocycle. Acyl amines may assume (I), (II), or may be composed of both. The equilibrium content of (I) and (II) was determined from the ultraviolet spectra, and herefrom the authors calculated the constant of the tautomeric equilibrium (Table 1). The presence of a linear dependence between the tautomeric equilibria

Card 2/3

On the Tautomerism of Some Derivatives of Heterocyclic Compounds. X. The Tautomerism of Acylated Heterocyclic Amines

SOV/76-33-9-33/37

of two different solvents (as has already been shown by M. I. Kabachnik (Ref 6) confirms that the tautomeric systems under discussion obey the Broensted-Izmaylov rule, i.e. the laws of equilibrium between acid and base. There are 8 figures, 1 table, and 9 references, 8 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze (All-Union Scientific Chemico-pharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: November 21, 1958

Card 3/3

SHVYAKIN, Yu. K., Doc Chem Sci -- (diss) "Tautomerism in a number of heterocyclic compounds and its study with the aid of spectra." Moscow, 1960. 20 pp; (Academy of Sciences USSR, Inst of Elementorganic Compounds); 150 copies; price not given; list of author's work at end of text (22 entries); (KL, 24-60, 128)

PHASE I BOOK EXPLOITATION SOV/4186

Akademiya nauk SSSR

Stroyeniye veshchestva i spektroskopiya (Structure of Matter and Spectroscopy) Moscow, Izd-vo AN SSSR, 1960. 113 p. Errata slip inserted. 2,300 copies printed.

Ed.: K. V. Astakhov, Professor; Tech. Ed.: T. P. Polenova.

PURPOSE: This collection of articles is intended for physicists and chemists interested in spectroscopic methods of research on the structure of molecules and related problems.

COVERAGE: The articles contained in this collection were taken from the editorial files of the Zhurnal fizicheskoy khimii (Journal of Physical Chemistry) and are concerned with spectroscopic methods in research on the structure of molecules, the hydrogen bond, isotopic effects, problems in magnetochemistry, the structure of aqueous solutions of electrolytes, and the chemistry of complex compounds. References accompany individual articles.

Pivovarov, V. M., and N. D. Ordynteva. Features of Spectroscopic Manifestation of Hydrogen Bond in n-Nitroanilins Molecules 20

The authors thank Ya. S. Bobovich and V. S. Nepomnt for their interest.

Shcherbakov, Yu. N., and Ye. M. Peresleni (Shcherbakov, Yu. N., and Ye. M. Peresleni (Khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze). (Chemical Pharmaceutical Institute imeni S. Ordzhonikidze). Tautomerism of Certain Derivative Heterocyclic Compounds. XI. The Deuteroeffect at Tautomeric Equilibrium and Spectra of N-Deuteroacylated Heterocyclic Amines 28

Sviridov, D. M., M. M. Shemyakin, M. N. Kolosov, and T. S. Vyatkinova (Fiziko-khimicheskiy institut im. L. Ya. Karpova) and Institute (Fiziologicheskoy i meditsinskoy khimii AMN SSSR (Institute of Biological and Medical Chemistry of the Academy of Medical Sciences USSR). Intermolecular Interaction and Oscillation Spectra of Acetylene Compounds 36

Ismail'skiy, V. A., and V. F. Potenkina-Moscow Pedagogical Institute im. V. P. Potenkin). Absorption Spectra of Derivatives of N-(p- (n-Nitrophenyl)-Ethyl-Aniline 41

Ismail'skiy, V. A., and V. Ye. Limanov (Moskovskiy pedagogicheskiy institut im. V. P. Potenkina (Moscow Pedagogical Institute imeni V. P. Potenkin)). Absorption Spectra of Derivatives of N-(p-(2,4-Dinitrophenyl)-Ethyl)-Aniline 53

Rabinovitch, I. B. (Gor'kovskiy gosudarstvennyy universitet im. N. I. Lobachevskiy (Gor'kiy State University imeni N. I. Lobachevskiy)). Effect of Displacement of Hydrogen by Deuterium on the Molal Volume of Liquids 62

Card 3/6

NESMEYANOV, A.N., akad.; PEREVALOVA, E.G.; SIMUKOVA, N.A.; SHEYNKER, Yu.N.; RESHETOVA, M.D.

Formation of the 1,2,3-oxadiazine ring in the reaction of 1,1'-diacetylferrocene with aryldiazonium compounds. Dokl.AN SSSR 133 no.4:851-854 Ag '60. (MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Oxadiazine) (Ferrocene) (Diazonium compounds)

TERENT'YEV, A.P., otv.red.; ALIMARIN, I.P., red.; GEL'MAN, N.E., red.; KLIMOVA, V.A., red.; KRESHKOV, A.P., red.; KUZNETSOV, V.I., red.; LEVIN, E.S., red.; PODGAYSKAYA, Z.I., red.; RUKHADZE, Ye.G., red.; TAL'ROZE, V.L., red.; TSUKERMAN, A.M., red.; SHEMYAKIN, F.M., red.; SHEYNKER, Yu.N., red.; YERMAKOV, M.S., tekhn.red.

[Conference on organic analysis] Soveshchanie po organicheskomu analizu. Tezisy dokladov. Moskva, Izd-vo Mosk.univ., 1961. 170 p. (MIRA 14:4)

1. Soveshchaniye po organicheskomu analizu. 1961.
(Chemistry, Analytical--Congresses)
(Chemistry, Organic--Congresses)

GUREVICH, A.I.; SHEYNKER, Yu.N.

Structure of 4-hydroxy-9-acridanone. Zhur.VKHO 6 no.1:116 '61.
(MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S.Ordzhonikidze.
(Acridanone)

SUVOROV, N.N.; OVCHINNIKOVA, Zh.D.; SHEYNKER, Yu.N.

Derivatives of indole. Part 11: Synthesis of 5-pyridazo-(4,5-b)-indole. Zhur.ob.khim. 31 no.7:2333-2339 Jl '61. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze.
(Indole)

SHEYNKER, Yu.N.; PERESLENI, Ye.M.

Tautomerism of some derivatives of heterocyclic compounds.
Part 12: Temperature dependence and some thermodynamic characteristics of the amine-imine tautomeric equilibrium of acylated heterocyclic amines. Zhur.fiz.khim. 35 no.11:2623-2627 N '61.
(MIRA 14:12)

(Amines)
(Heterocyclic compounds)
(Tautomerism)

ZAITSEV, B.Ye.; SHEYNKER, Yu.N.; KORESHKOV, Yu.D.

Infrared spectra and structure of some nonbenzoid aromatic compounds. Dokl.AN SSSR 136 no.5:1090-1092 F '61. (MIRA 14:5)

1. Institut khimii prirodnykh soyedineniy AN SSSR. Predstavleno akad. M.M.Shemyakinym.
(Aromatic compounds—Spectra) (Carbonyl group)

ZAYTSEV, B. Ye.; KORESHKOV, Yu.D.; VOL'PIN, M.Ye.; SHEYNKER, Yu.N.

Structure of diphenylcyclopropenone and tropone salts. Dokl. AN SSSR 139 no.5:1107-1109 Ag '61. (MIRA 14:8)

1. Institut khimii prirodnykh soyedineniy AN SSSR i Institut elementoorganicheskikh soyedineniy AN SSSR. Predstavleno akademikom M.M. Shemyakinym.
(Propenone) (Cycloheptatrienone)

SHEYNKER, Yu.N.; POSTOVSKIY, I.Ya.; BEDNYAGINA, N.P.; SENYAVINA, L.B.; LIPATOVA, L.F.

Equilibrium between the tetrazole and azide forms in benzothiazole-tetrazole. Dokl. AN SSSR 141 no.6:1388-1390 D '61. (MIRA 14:12)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova i Institut khimii prirodnykh soyedineniy AN SSSR. Predstavleno akademikom M.I.Kabachnikom.

(Benzothiazole) (Tetrazole) (Azides)

SUVOROV, N.N.; PREOBRAZHENSKAYA, M.N.; UVAROVA, N.V.; SHEYNKER, Yu.N.

Synthesis of benzo-substituted indolylisopropylamines. Izv.AN SSSR Otd.khim.nauk no.4:729-730 Ap '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S.Ordzhonikidze i Institut khimii prirodnykh soyedineniy AN SSSR.

(Amines)

SENYAVINA, L.B.; OVCHINNIKOV, Yu.A.; SHEYNKER, Yu.N.

Infrared spectra of substituted γ-lactones of 2-hydroxcyclohexylacetic acids. Izv. AN SSSR. Otd.khim.nauk no.5:777-784 My '62. (MIRA 15:6)

1. Institut khimii prirodnykh soyedineniy AN SSSR.
(Lactones--Spectra) (Acetic acid)

S/062/62/000/011/005/02:
B101/B144

AUTHORS: Nesmeyanov, A. N., Kochetkova, N. S., Vil'chevskaya, V. D., Sheynker, Yu. N., Senyavina, L. B., and Struchkova, M. I.

TITLE: o-Carboxy- and o-hydroxy benzoyl ferrocenes and their derivatives

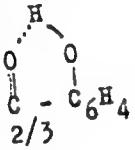
PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 11, 1962, 1990 - 1996

TEXT: The IR and UV spectra of the following compounds were studied: o-carboxy benzoyl ferrocene (A); o-hydroxy benzoyl ferrocene (B) synthesized from salicyl chloride and ferrocene in the presence of $AlCl_3$ in CH_2Cl_2 solution at 45 - 50°C; o-methoxy benzoyl ferrocene (C) obtained by methylating B with dimethyl sulfate, yield 96%; o-acetoxy benzoyl ferrocene (D) obtained by acetylating B with acetic anhydride, yield 95%; c-hydroxy benzyl ferrocene (E) obtained by reducing B with zinc amalgam, yield 77%; o-methoxy benzyl ferrocene (F) obtained by methylating E with dimethyl sulfate, yield 94%; o-hydroxy phenyl ferrocenyl carbinol (G) obtained by reducing B with $LiAlH_4$, yield 90%; and o-methoxy ferrocenyl carbinol (H)

Card 1/3

o-Carboxy- and o-hydroxy...

obtained by methylating C with dimethyl sulfate, yield 93%. Ethers of the type $C_{10}H_9Fe\text{-}CH(OR)\text{-}C_6H_4OH$ were obtained by recrystallizing G in the corresponding alcohols. For R = CH_3, the m.p. was 119 - 120°C, the yield 89%; for R = C_2H_5, m.p. 117°C, yield 94%; and for R = i-C_3H_7, m.p. 79-80°C, yield 89%. The spectroscopic studies showed: (1) Both the crystallized and the dissolved A showed no tautomerism by ring closure. The structure of A is therefore open: Fc-CO-C_6H_4-COOH (Fc = ferrocenyl), although in an earlier study (Dokl. AN SSSR, 138, 390 (1961)) derivatives of the tautomeric form Fc-C(O-CO)(OR)-C_6H_4 were also synthesized from this compound. (2) With B there is also no hydroxy quinone tautomerism, but an intramolecular H bond is formed. There are 4 figures and 1 table. The most



Fc - C(=O)(O-H...) - C_6H_4

Card 2/3

important English-language reference is: R. L. Schaaf, J. Organ. Chem., 27, 107 (1962).

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR). Institut khimii prirodnykh soyedineniy Akademii nauk SSSR (Institute of Chemistry of Naturally Occurring Compounds of the Academy of Sciences USSR)

SUBMITTED: April 4, 1962

YASHUNSKIY, V.G.; SHEYNKER, Yu.N.

Sydnones and sydnone imines. Part 11: Study of the structure of sydnone imines by means of infrared spectra. Zhur.ob.khim. 32 no.5:1681-1687 My '62. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordzhonikidze.
(Sydnone imine--Spectra)

SHEYNKER, Yu.N.; PERESLENI, Ye.M.

Tautomerism of certain heterocyclic derivatives. Part 13: Spectra and structure of heterocyclic amines. Zhur.fiz.khim. 36 no.8:1705-1712 Ag '62. (MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordzhonikidze.
(Heterocyclic compounds--Spectra) (Amines)

YAGUDAYEV, M.R., SHEYNKER, Yu.N.

Integral intensity of the deformation oscillation bands of a primary amino group. Dokl.AN SSSR 144 no.1:177-179 My '62. (MIRA 15:5)

1. Institut khimii rastitel'nykh veshchestv AN UzSSR i Institut khimii prirodnykh soyedineniy AN SSSR. Predstavleno akademikom A.N.Tereninym.

(Amino group--Spectra)

ZAYTSEV, B.Ye.; SHEYNKER, Yu.N.

Intensity of carbonyl band in infrared spectra of sydnones.
Izv.AN SSSR.Otd.khim.nauk no.3:407-412 Mr '62. (MIRA 15:3)

1. Institut khimii prirodnykh soyedineniy AN SSSR.
(Sydnone—Spectra)

GUREVICH, A.I.; SHEYNKER, Yu.N.

Tautomerism of certain derivatives of heterocyclic compounds. Part 7. Tautomerism of acylaminoacridines. Zhur. fiz. khim. 36 no.4:734-741 Ap '62. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni Ordzhonikidze.
(Tautomerism) (Amides)

DVORYANTSEVA, G.G.; SHEYNKER, Yu.N.

Determination of the number of hydroxyl and carbonyl groups in steroid molecules based on the intensity of bands in the infrared spectra. Zhur.anal.khim. 17 no.7:883-889 0 '62.
(MIRA 15:12)

1. Institute of Chemistry of Natural Compounds, Academy of Sciences, U.S.S.R, Moscow.
(Steroids) (Hydroxyl group--Spectra) (Carbonyl group--Spectra)

DORYANTSEVA, G.G.; SHEYNKER, Yu.N.

Determination of the number of hydroxyl and carbonyl groups in steroids by the bond intensity in infrared spectra. Izv. AN SSSR. Ser.fiz. 26 no.10:1290-1295 O '62. (MIRA 15:10)
(Steroids—Spectra)

YASHUNSKIY, V.G.; PERESLENI, Ye.M.; SHEYNKER, Yu.N.

Spectroscopic study of the structure and properties of sydnone imines. Izv. AN SSSR. Ser.fiz. 26 no.10:1295-1298 '62. (MIRA 15:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S.Ordzhonikidze.
(Sydnone imine—Spectra)

POSTOVSKIY, I.Ya.; BEDNYAGINA, N.P.; SENYAVINA, L.B.; SHEYNKER, Yu.N.

Study of azide-tetrazole tautomerism with the aid of infrared spectroscopy. Izv. AN SSSR.Ser.fiz. 26 no.10:1298-1300 O '62. (MIRA 15:10)

1. Ural'skiy politekhnicheskiy institut im. Kirova i Institut khimii prirodnykh soyedineniy AN SSSR.
(Azides--Spectra) (Tetrazole--Spectra) (Tautomerism)

SIMONOV, A.M.; GARNOVSKIY, A.D.; SHEYNKER, Yu.N.; KHRISTICH, B.I.; TROFIMOVA, S.S.

Some transformations of the systems containing an imidazole ring. Part 3: Action of bases of N-methyl-N'-(2,4-dinitrophenyl) imidazolium salts. Zhur.obshch.khim. 33 no.2:571-579 F '63. (MIRA 16:2)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.
(Imidazolium compounds)

ZAYTSEV, B.Ye.; SHEYNKER, Yu.N.

Intensity of C=O bands in infrared spectra of some carbonyl-containing heterocyclic compounds. Izv. AN SSSR. Otd.khim.nauk no.11:2070-2072 N '62. (MIRA 15:12)

1. Institut khimii prirodnykh soyedineniya AN SSSR.
(Heterocyclic compounds—Spectra) (Carbonyl group—Spectra)

ACCESSION NR: AP3000129 S/0062/63/000/005/0924/0927

AUTHOR: Dvoryantseva, G. G.; Sheynker, Yu. N.

TITLE: The integral intensities of infrared bands of characteristic oscillations of the functional ferrocene derivative groups

SOURCE: AN SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1963, 924-927

TOPIC TAGS: monosubstituted groups of ferrocene, disubstituted groups of ferrocene, carbonyl group integral intensities

ABSTRACT:: The measurement of frequencies and the integral intensities of the infrared absorption bands of mono and divalent oscillations of various types of carbonyl groups such as aliphatic, aromatic, and ferrocene ketones, complex ethers, amides, and nitrile groups of ferrocene derivatives in various solvents (heptane, dioxane, carbon tetrachloride) have been obtained. The obtained results were compared with the known frequencies and intensities of similar aliphatic and aromatic compounds. The frequencies of the infrared valence oscillation bands of the electron-accepting functional groups of the monosubstituted derivatives of ferrocene are lowered. However, the integral intensities are higher in comparison with benzene derivatives. The integral intensities of the carbonyl bands of the disub-

Card 1/2

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stituted derivatives of ferrocene are lowered as a result of reciprocal transference effect of the substitutions via the ferrocene nucleus. "The authors express their gratitude to E. G. Perevalova, N. S. Kochetkova, and S. P. Gubin for their kind help in the production of compounds." Orig. art. has: 2 tables.

ASSOCIATION: Institut khimii prirodnykh soyedineniy Akademii nauk SSSR (Institute of the Chemistry of Natural Chemical Compounds, Academy of Sciences SSSR)

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Card 2/2

SHEYNKER, YU. N.

"Intensitat der characteristischen Bande in IR-Spektren und Struktur der Molekule."

report submitted for the VIIth European Congress on Molecular Spectroscopy, Budapest, 22-27 Jul 1963

YAGUDAYEV, M.R.; SHEYNKER, Yu.N.

Integral intensity of the deformation vibration band of an amino group in infrared spectra of substituted anilines. Izv. AN SSSR. Ser. khim. no.12:2230-2232 D '63. (MIRA 17:1)

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AUTHORS: Yakovlev, I. P.; Sheynker, Yu. N.; Popov, Ye. M. 57

TITLE: Calculation of normal oscillations of methylamine B

SOURCE: Ref. zh. Fizika, Abs. 11D96

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 10-18

TOPIC TAGS: molecular spectrum, molecular theory, amine, oscillation, VIBRATION SPECTRUM

ABSTRACT: On the basis of a calculation of the vibrational spectra of methylamine and its deuterium derivatives, the authors determine the force field of the molecule. The frequencies and forms of the normal oscillations of methyl- and ethylamine. The characteristic nature of the oscillations pertaining to the amino-group is investigated. It is shown in particular that the frequencies and intensities of the oscillations connected with the NH_3 group in the spectra of different amines are determined essentially by the force and electrooptical parameters of this group. [Translation of abstract]

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LS

Card 1/1

PERESLENI, Ye.M.; SHEYNKER, Yu.N.; ZOSIMOVA, N.P.; POMERANTSEV, Yu.I.

Tautomerism of some derivatives of heterocyclic compounds. Part 5. Zhur. fiz. khim. 37 no.12:2713-2720 D '63. (MIRA 17:1)

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SHEYNKER, Yu.N.; PERESLENI, Ye.M.; KOL'TSOV, A.I.; BAZHENOV, N.M.
VOL'KENSHTEYN, M.V.

Structure of 2-aminothiazoline. Dokl.AN SSSR 148 no.4:878-880 F '63. (MIRA 16:4)

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Predstavleno akademikom M.M.Shemyakinym.
(Thiazoline)